

PART FOUR of volume 173 of the Phil. Transactions of the Royal Society of London is devoted to a report by Lawes and Gilbert on the botanical results of experiments on the mixed herbage of permanent meadow, conducted for more than twenty years in succession on the same land. It embraces 235 quarto pages with many tables, and is replete with interesting matter.

MR. THOS. MEEHAN, who visited the western coast last summer, dissents in the current signatures of the Proc. Phila. Acad. from the views of Mr. Muir, to be found in the Proc. Am. Assoc., that the Sequoias create by their presence the streams and moisture where they grow, and states that, on the contrary, other kinds of forests are equally good accumulators of moisture, while a moist soil is not essential to the growth and full development of the Sequoias, but adds that the seed, nevertheless, requires for its survival a humid atmosphere till after germination and the thorough establishment of the plantlet. The absence of humid conditions at the present time that may reasonably be inferred to have once existed, sufficiently accounts for the failure of the Sequoias to spread beyond the bounds they have evidently maintained for a long term of years.

MR. JOHN MUIR furnishes seven quarto pages of Botanical Notes to the report of the Cruise of the Revenue-Steamer Corwin in 1881, just issued from the government printing office. Lists are given of the flowering plants collected at various localities on the coasts of Alaska, Siberia and adjacent islands.

DR. A. L. CHILD follows his previous paper in the *Pop. Sci. Mo.* (Dec. '82) with another (Dec. '83) on the "Concentric Rings of Trees," in which he repeats the main statements of the former paper and brings additional testimony to show that the concentric rings of trees are not necessarily annual. This evidence (here presented in tabular form) is based upon actual specimens cut from trees of known age.

<i>Specimens furnished by</i>	<i>Species.</i>	<i>Known age, yrs</i>	<i>Number of Rings.</i>
Hon. Robt. W. Furness	Pig hickory	11	16
" " " "	Green ash	8	11
" " " "	Ky. Coffee tree	10	{ 14 main, 21 sub-rings.
" " " "	Bur oak	10	24
" " " "	Black walnut	5	12
" " " "	Chestnut	4	7
" " " "	Peach	8	6
" " " "	Chestnut oak	24	18
Prof. J. L. Budd, Iowa Agr. College.	Spruce (Puget S'd) spec- imen 12 in. long	15	{ 18 at one end, 12 at the other end.
Mr. H. P. Child, Kansas	Pine	8	19
City Stock Yards.	Soft maple	14	{ 16 main, 47 sub-rings.

The evidence here presented is certainly very strong; strong enough at least to make us drop the term "annual rings" and substitute the more expressive and in many cases more truthful one, *growth rings*.

### CURRENT LITERATURE.

*Contributions to North American Botany.* By Asa Gray. Proc. Am. Acad. 19. pp. 1-96.

As would be expected, the principal part of this contribution is devoted to the *Compositæ*, new species being described and certain genera revised. The following notes were made in looking through the pages, and while they seem desultory they indicate somewhat the order of treatment:



The principal accessions to *Asteroidæ* are four new species of *Erigeron*, all but one from Arizona. *Inuloideæ* are represented by three new *Gnaphaliums*, two of them Mexican, and a foot-note calls attention to the fact that the Mexican species of this genus are sadly in need of revision. Among *Helianthoideæ*, *Viguiera* gains four or five new species and in *Encelia* it is found that the presence or absence of pappus is so inconstant a character that the primary sections must be reduced. A new subgenus of *Helianthella*, *Enceliopsis* by name, is proposed to include *H. nudicaulis* and *H. argophylla*. All the species of *Actinomeris* are included under *Verbesina*, except those upon which Nuttall originally founded the genus, and an enumeration of N. Am. and Mexican species of *Verbesina* is given, *Actinomeris* appearing for the most part under the section *Pterophyton* and the specific names transferred, except *A. pauciflora*, which appears as *V. Warei*, there being already a Mexican *V. pauciflora*. After a new study of all the species of *Laphamia* and *Perityle* Dr. Gray thinks the two genera should be preserved with their original limitation, and not changed as suggested by Bentham.

A new genus of *Helenioideæ* is named *Eatonella*, in honor of Prof. D. C. Eaton, and contains two species. On page 21 a revision of the genus *Baeria* is given, showing 15 species. A re-arrangement of species under *Eriophyllum* and *Bahia* is given, *Actinolepis* (exclusive of *Ptilomeris*) being included in the former, and *Achyropappus* in the latter, thus relieving the genus *Schkuhria*. A revision of *Actinella* is given, showing 19 species, arranged in three sections, the first of which (*Plateilema*) is new. *Dysodia*, *Hymenatherum* and *Tugetes* are also revised and receive several new species. For *Pectis* three new sections are proposed and the relation of the species shown. A revision of  $\frac{1}{2}$  *Seriphidium* of *Artemisia* is given, showing nine species. The author holds on to *Cacalia* as distinct enough from *Senecio* to rank as a separate genus, and gives a conspectus of N. Am. species. Some interesting species of *Senecio* are described and certain changes in nomenclature made. *S. aureus*, var. *werneriaefolius* takes specific rank under the variety name, while *S. Elliottii*, T. & G. comes under the var. *obovatus* of *S. aureus*. The name *S. Neo Mexicanus* is now given to a puzzling form which appears in collections variously named *S. Fendleri*, *multilobatus*, *aureus*, etc. A key to N. Am. and Mexican species of *Perezia*  $\frac{1}{2}$  *Acourtia* is given in a foot-note, while a revision of the genus *Stephanomeria* appears in the body of the contribution, showing 14 species, two of which are new. A synopsis of the Rocky Mt. and Pacific species of *Hieracium* is given, six new species and several varieties being described.

There is also a revision of *Troximon*. Under "Miscellaneous genera and species," five new species of *Astragalus* appear. A new Rocky Mt. *Sambucus* is described, *S. melanocarpa*, and the name *Lonicera Sullivantii* given to the form which appears in the Manual as *L. flava*. The real *L. flava* has a range wholly southern, and the name *L. Sullivantii* should be substituted for all the *L. flava* from "Central Ohio to Illinois, Wisconsin and Winnipeg." A new genus of *Rubiaceæ* from Cuba is described, *Nodocarpæu*. *Fedia* and *Plectritis* are both included in *Valerianella*, and the species of the Manual become as follows: *F. olitoria* = *V. olitoria*; *F. Fagopyrum* = *V. chenopodifolia*; *F. radiata* = *V. radiata*; *F. umbilicata* = *V. Woodsiana*, var. *umbilicata*; *F. patellaria* = *V. Woodsiana*, var. *patellaria*. A new genus of *Lobelias*, *Parishella*, is described, a notice of which appeared in BOT. GAZ. 7, 94. The two forms which heretofore have appeared under *Gaultheria Myrsinites* are separated into two species, one retaining the old name, and the other being called *G. ovatifolia*. Two new species of *Asclepias*, one from Florida and the other from Arizona, and two of *Gentiana*, both from the Rocky Mts. of Wyoming, Colorado and southward, three of *Phacelia* from S. California, five of *Eritrichium*, all from S. California, with several other genera represented by single species, complete the contribution. Most of the work here recorded has been done in the preparation of the forthcoming volume of the Synoptical Flora, the appearance of which all botanists sincerely hope may not be much longer delayed.